known as the capercaillie, or cock of the woods—the *Tetrao urogallus* of naturalists—and Mr. Harvie-Brown tells us the story of its extinction and revival in the interesting volume now before us.

The capercaillie, as Mr. Harvie-Brown after much discussion, decides that the name is most correctly written, was certainly a not unfrequent denizen of the pine-woods of Scotland and Ireland in former days, but, for some not yet clearly understood reasons, became gradually rarer in both countries, and according to the best evidence was finally extinct between the years 1745 and 1760, although there are several records of its alleged occurrence in Scotland at a later date, which Mr. Harvie-Brown considers "at least worthy of notice." In 1807 a capercaillie is said to have been shot in the Camus-na-gaul woods opposite Fort William, but this must have been the last survivor of the ancient race, for it is allowed on all sides that at the beginning of the present century the capercaillie could no longer be reckoned as an existing "British bird." Its reintroduction was effected by the late Marquis of Breadalbane in 1837 and 1838, after several ineffectual attempts. Living birds obtained in Sweden through the instrumentality of Sir Thomas Fowell Buxton and by the energy of Mr. Lloyd, the well-known Swedish sportsman and naturalist, were transported to this country and safely delivered at Taymouth under the care of English gamekeepers. About forty-eight individuals were imported in these two years, some of which were turned out, while others were kept in captivity for breeding purposes. So well did they succeed that in 1862 or 1863 their numbers on the Breadalbane estates were estimated to be at least 1,000, whilst according to other accounts they reached at this period to over 2,000 in number. From the Taymouth woods the capercaillies spread gradually over the adjacent districts of Central Scotland, wherever fir-woods prevailed suitable to the habits and food of the bird. Mr. Harvie-Brown gives us details of their first appearance and present numbers on various estates in Perthshire, Forfarshire, Fife, Kinross, Clackmannan, and Stirling, besides other outlying counties. A neatly executed map enables us to realise at one glance the statistics that Mr. Harvie-Brown has so diligently collected. "The capercaillie then," he concludes, "has populated the woods and forests of part of Scotland principally by its own exertions, since the great restoration at Taymouth; but there are certain minor centres of introduction which have undoubtedly added *some* impulse to their advance, though perhaps not to any extent compared with the impulse from the great centre." All naturalists must, we are sure, feel indebted to Mr. Harvie-Brown for the pains he has taken in investigating this interesting subject, and will congratulate themselves upon the restoration of this noble species to the British avifauna.

OUR BOOK SHELF

San Remo and the Western Riviera, Climatically and Medically Considered. By Arthur Hill Hassall, M.D. (London: Longmans and Co., 1879.)

DR. HASSALL has written a really useful work on a part of the Italian coast possessing many points of interest, more especially to those affected with chest diseases. He himself has spent two winters in the Western Riviera, and during that period has diligently collected information by personal observation and otherwise on the spot. Partly in this way, and partly by consulting anthorities on the topography of the district, and with the help of specialists in various departments of natural history, Dr. Hassall has compiled a work which may be taken as a full and trustworthy guide by all who wish to visit the Riviera either for pleasure or health. There are a few attractive illustrations and a good map.

LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.*

[*The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.*]

An Index to Zoological Genera

THE Smithsonian Institution at Washington will publish at an early day an index, in one alphabet, to all genera hitherto proposed in zoology, whether for recent or fossil animals. It is to be based upon the "Nomenclators" of Agassiz and Marschall and the indexes to the *Zoological Record*. The name of the genus will be followed by the name of its proposer, the order to which it is referred, the date of its publication, and the symbols **A.**, **M.**, **Z.**, or **App.** (to indicate that a full reference may be found in [**A.**] Agassiz's "Nomenclator," [**M.**] Marschall's "Nomenclator," [**Z.**] the *Zoological Record*, or [**App.**] the Appendix to the proposed work), thus:—

Donachlora, *Sodoffsky*, Mamm., 1837, **A.**
Dorcasia, *Gray*, Gaster., 1847, **M.**
Loganius, *Chapuis*, Coleopt., 1869, **Z.**
Periplacis, *Geyer*, Lepid., 1837, **App.**

Names to which objection has been raised will be prefixed by an asterisk.

The appendix referred to will record in greater detail names which have been overlooked in the lists above mentioned, or have been published since 1877, the year reviewed in the last *Zoological Record*.

The object of this communication is to invite *at once* from European zoologists, and especially from palæontologists, lists of such names as should appear in the appendix. Such names (including corrections of any kind to the text of Agassiz's or Marschall's Nomenclators) should be accompanied by the name of the proposer of the genus, full bibliographical reference, date, etymology, and the order of animals to which the genus is referable. *In the Index the name of the person furnishing the reference will also be added as its sponsor.*

Many American zoologists have promised their assistance, but it must be evident that a work so extensive and of such universal value can only be satisfactorily prepared by the aid of European naturalists. As it is expected that the MS. of the Index will be ready by December 1 next, friends of the plan are earnestly invited to communicate with the subscriber at the earliest possible day.

SAMUEL H. SCUDDER

Library of Harvard University, Cambridge,
U.S.A., September 22

The Mineral Waters of Hungary

THE numerous mineral waters of Hungary, some of which are used as table-waters, while others are prized for their medicinal properties, are unfortunately very imperfectly known either to the scientific world or the general public, and, what is worse, many of the particulars which have been published about them are altogether incorrect and misleading.

There are a number of balneological works treating of the European mineral springs generally, which include descriptions of those of Hungary, but in almost all cases these descriptions are either obsolete or unreliable. That such incorrect statements should appear in the works of foreigners is perhaps excusable, when we consider the difficulties under which the authors must labour in seeking to obtain information upon the subject; but we may fairly expect that a work published in Hungary should be without any such serious errors. It is a most unfortunate

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circumstance that a work bearing the title "Les Eaux Minerales de la Hongrie," published under the auspices of the Hungarian Commission of the last Paris Exhibition, and very extensively circulated by them, is found upon examination to be altogether unreliable in its information. In the interests of truth I feel called upon to point out to foreigners the unsatisfactory nature of this work. This condemnation of the work in question is borne out by the following facts:—The book enumerates less than forty per cent. of the localities in Hungary at which mineral springs occur, no fewer than a thousand of such localities being omitted. Perhaps it is by way of compensating for these omissions that the anonymous author augments his list by making two or three mineral springs out of one by not discriminating its synonyms, and also by enumerating others which have no real existence. In many cases the author has failed to indicate the localities to which his information refers, especially in those instances in which there are several places of the same name; and these difficulties are increased by the numerous typographical errors in the book. The analyses published in the work are of a very unsatisfactory character, for while more than one hundred of the most recent and valuable analyses are altogether omitted, others, which were made twenty or thirty years ago, and are therefore far less reliable, are included in it.

Although it cannot be expected that a large class of readers should take an interest in these details about the Hungarian mineral waters, yet I have thought it right to point out the unreliable character of this work in your widely-circulated journal, so that the errors should not be transferred to the pages of balneological works of a more general character. To the authors of such works I should be glad to furnish information concerning the mineral waters of this country, as it is a subject which I have made my especial study. J. BERNÁTH

Buda-Pest

Does Sargassum Vegetate in the Open Sea?

IT is related by Humboldt and Harvey that floating *Sargassum bacciferum* vegetates in the open sea, by sprouting branches without fructification, whilst other naturalists have seen in the yellowish floating pieces only the pale and altered dead remains of the plant. If these floating fragments were capable of vegetating, their branches should be brown or olive-coloured like living specimens on the rocks below water on the sea-shore, and if floating Sargassum really grow, fructification should not be wanting.

I have heard from several travellers, who have sometimes crossed the Sargasso Sea, that they, like me, never saw other than pale and dead floating sargassum, so that I believe those accounts of Humboldt and Harvey to be erroneous. Does any reader of NATURE know of living Sargassum in the open sea as a fact?

There exist many fanciful reports on Sargassum, *e.g.*, that some branches of the floating Sargassum rise two inches above water, and are thus driven along by the wind. Can any one confirm this? No botanist has hitherto observed it, and no sea-weed is known to behave thus. Haeckel and other learned men who never crossed the Sargasso Sea, speak of "a colossal sea-weed forest of 40,000 geographical square miles."

I would be greatly indebted for exact information as to the degree of density in which Sargassum has been observed. Although I was eleven days crossing in a steamer the two great seas containing Sargassum, I saw nothing at all in the Pacific on the direct route from San Francisco to Yokohama; and in the Atlantic I observed only single fragments from 50 to 100 feet apart; other credible travellers assure me of having seen the Sargassum sometimes almost grouped together in loose masses or strips of about 400 feet in length, hardly at all entangled and of no depth. I doubt therefore, also, whether Sargassum could hinder sailing vessels. OTTO KUNTZE

Leipzig-Eutritzsch, September 30

[In Dr. Kuntze's letter, vol. xx. p. 426, line 4, read: "In Eozöon they became;" line 31, "under red heat;" line 40, condensed, not into incandescent liquids, but into incandescent crystals; line 44, "granate" ("garnet," not "granite").]

A Liquid Rheostat

WHILE experimenting on resistance to the electric current, I have devised an instrument in which fluid is used to conduct the current under examination. This may perhaps be of use to some who are interested in this subject. The sketch, Fig. 1, shows the nature of the instrument. A B is a piece of elastic tube containing a weak solution of salt in water; this is held in the clamp C. By the screw D the tube can be compressed and its sectional area altered, and through this its resistance. G is the galvanometer and E the battery. Finding the instrument to be very sensitive on a reflecting galvanometer I thought that probably the tube would be a means of transmitting articulate speech. I find this to be the case. Fig. 2, A B, elastic tube similar to the one used in the former instrument; C C, mouthpiece; E, disk, connected to the tube at E. A B is put in circuit with a telephone and battery; D, screw to regulate the pressure on the tube. I call the instrument, Fig. 1, a liquid rheostat.

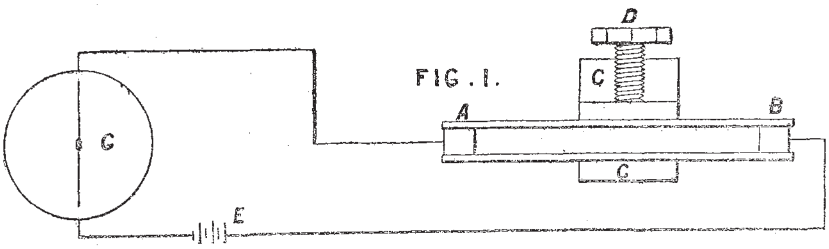
FIG. 1.

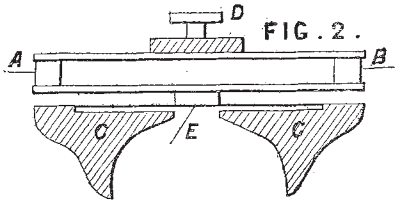
FIG. 2.

Taunton, September 24 FREDERICK JOHN SMITH

The Carving of Valleys

MR. WALTER R. BROWNE tells us in NATURE, vol. xx. p. 504, that he has discovered in the valley of a highland burn evidence that "the agencies of 'sub-aërial waste' are seen to have worked their will for untold ages on the Cambrian sandstones of Glen Beansdale, and to have produced—nothing."

Without making any attempt to explain how the old river channel he describes is not "choked by the *débris* which has come down from its sides," further than to suggest that "the tiny runnel which now drains the gulley" may sometimes be, not the little streamlet which Mr. Browne saw, but a great roaring torrent quite capable of "direct erosion of its own, and of sweeping away the *débris*" which may have tumbled into it from its sides, it appears to me remarkable that evidence *against* sub-aërial denudation should be brought from the Scottish highlands where every mountain and valley seem to testify eloquently in its favour. I am pretty familiar with a great part of the northern highlands, and I do not remember a single mountain which does not bear on its flanks ample evidence of the energy of this form of erosion. It is now some years since I have been at Loch Maree, but if I am not greatly mistaken Ben Slioch itself is draped in loose angular fragments, the result of its own decay. If Mr. Browne, while in these regions, visited Glen Sligachan, in Skye, he must have found that wherever he walked in that wild valley, it was on fragments of rock that have not only slid down the mountain sides in vast torrents, but spread out over the whole floor of the glen, burying the original glaciated surface deep beneath them; and in all parts of the more southern and central highlands we find the same irresistible evidence of the continued waste of the hillsides by heat and cold and the rainfall.

As to the behaviour of streams in excavating valleys, very much depends upon the character and arrangement of the rocks over which the river flows; there are many streams in both

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